LEVEL OF COGNITIVE DEMAND ON POLYA'S FOUR-STEP MODEL-BASED LEARNING ACTIVITY SHEETS AND THE STUDENT'S PROBLEM-SOLVING SKILLS

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ABSTRACT

The goal of mathematics in the basic education level is to produce students that are critical thinkers and problem solvers. This is the challenge of every mathematics teacher in this new normal where education is delivered through distance learning modality. This study sought to assess and improve students' problem-solving skills through learning activity sheets tailored through Polya's Four-Step Model to selected students of San Jose National High School for school year 2020-2021. Descriptive-Experimental design was utilized in the study participated by thirty (30) Grade 9-Compassion students. A teacher made the learning activity sheets and survey questionnaire was utilized. Mean, standard deviation, frequency, percentages, Pearson product moment of correlation and repeated measures ANOVA were the statistical treatments used. Based on the findings, there is a low level of cognitive demand when it comes to memorization and processes without connections while somewhat high on the aspects of doing Mathematics tasks and procedures with connecting tasks, seeing that there are students which are more inclined in following patterns and routine activities. There was a significant difference on the respondents' problem-solving skills in terms of understanding, planning and look back, as proven by the increase of students achieving Exemplary and Accomplished levels after immersing themselves in said learning materials. Using Polya's model, it has been determined that learning materials are important in helping students understand the concepts presented based on their learning capacities. In addition, time is a significant factor in learning. The researcher recommends the provision of more extensive pre-test and post-test in assessing students' improvement, in addition to the development of student-specific learning materials when it comes to Mathematics. The effect of interventions or one-on-one teaching can also be examined if these will be able to influence results and further student understanding.

Keywords: cognitive demand, problem-solving skills, learning materials, Polya's Four-Step Model, SPSS Analysis, Philippines